

# Large Scale Image Completion via Co-Modulated Generative Adversarial Networks

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## Abstract

Numerous task-specific variants of conditional generative adversarial networks have been developed for image completion. Yet, a serious limitation remains that all existing algorithms tend to fail when handling large-scale missing regions. To overcome this challenge, we propose a generic new approach that bridges the gap between image-conditional and recent modulated unconditional generative architectures via co-modulation of both conditional and stochastic style representations. Also, due to the lack of good quantitative metrics for image completion, we propose the new Paired/Unpaired Inception Discriminative Score (P-IDS/U-IDS), which robustly measures the perceptual fidelity of inpainted images compared to real images via linear separability in a feature space. Experiments demonstrate superior performance in terms of both quality and diversity over state-of-the-art methods in free-form image completion and easy generalization to image-to-image translation. Code is available at <https://github.com/zsyzzsoft/co-mod-gan>.